REMARKS

In the Office Action, the Examiner rejected claims 1–20. By way of this response, Applicants have amended claim 18 to correct a typographical error. Claims 1–20 remain pending in the present application and are believed to be in condition for allowance. In view of the following remarks, the Applicants respectfully request reconsideration and allowance of all pending claims.

Claim Rejections under 35 U.S.C. § 103(a)

In the Office Action, under 35 U.S.C. §103(a), the Examiner rejected independent claim 1 and dependent claims 7-10 as unpatentable over Tsao et al. (U.S. Publication No. 2002/0087857 A1; hereinafter Tsao) in view of Utz (U.S. Patent No. 6,097,307; hereinafter Utz); rejected independent claim 11 and dependent claims 14-16 as unpatentable over Liu et al. (U.S. Patent No. 6,760,752 B2; hereinafter Liu) in view of Utz; and rejected independent claim 17 and dependent claims 18 and 20 as unpatentable over Tsao in view of Liu and Utz. Additionally, under 35 U.S.C. §103(a) the Examiner rejected dependent claims 2-3 as unpatentable over Tsao in view of Utz and Liu; rejected dependent claims 4-6 as unpatentable over Tsao in view of Utz, Liu, and Gallup; rejected dependent claims 12-13 as unpatentable over Liu in view of Utz and Gallup; and rejected dependent claim 19 as unpatentable over Tsao in view of Liu and Gallup. Applicants respectfully traverse these objections.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the

desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d. 1430 (Fed. Cir. 1990). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). The Examiner must provide objective evidence, rather than subjective belief and unknown authority, of the requisite motivation or suggestion to combine or modify the cited references. *In re Lee*, 61 U.S.P.Q.2d. 1430 (Fed. Cir. 2002). Moreover, a statement that the proposed modification would have been "'well within the ordinary skill of the art'" based on individual knowledge of the claimed elements cannot be relied upon to establish a *prima facie* case of obviousness without some *objective reason to combine* the teachings of the references. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993); *In re Kotzab*, 217 F.3d 1365, 1371, 55 U.S.P.Q.2d. 1313, 1318 (Fed. Cir. 2000); *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 U.S.P.Q.2d. 1161 (Fed. Cir. 1999).

Independent Claim 1 Recites Features Omitted from Tsao and Utz

Independent claim 1 recites, *inter alia*: "obtaining a seed pool comprising a plurality of bits for generating the random number; remotely storing a seed pool backup of the seed pool via a network; and restoring the seed pool backup to local memory following a power loss event causing loss to the seed pool." The Applicants respectfully assert that Tsao and Utz do not teach or suggest, alone or together, all of the features recited above.

In the Office Action, the Examiner incorrectly asserted that Tsao teaches "obtaining a seed pool comprising a plurality of bits for generating the random number," as recited in independent claim 1. *See* Office Action mailed May 16, 2005, p.2. However the Examiner's reading of Tsao clearly ignored the claimed "seed pool" among other features. In sharp contrast to the foregoing claim features, Tsao describes the use of a

random number generator implemented in a hardware device. Tsao, Fig. 2. "The HRNG controller 16 includes a hardware random number generator (HRNG) 16a." *Id.* para. 72, ll. 1–2. No seed pool for the generation of a random number is ever isolated from this hardware function. As stated in Tsao, "[c]urrent hardware RNGs do not require a starting value or seed." *Id.* para. 5, ll. 10–11. Thus, use of a seed pool is not contemplated by Tsao, and Utz does not teach or suggest otherwise.

The Examiner also incorrectly asserted that Tsao teaches "remotely storing a seed pool backup of the seed pool via a network," as recited in claim 1. In Tsao, random numbers are used in the communications between the host and the remote device for the purpose of encrypting the messages to protect the individual transactions. *See id.* paras. 14–18. Since Tsao has no seed pool of random bits, it has no need for remotely storing such a seed pool. Again, remote storage of a seed pool would not be used with Tsao taken alone or in hypothetical combination with Utz.

Finally, the Examiner admitted that Tsao fails to teach "restoring the seed pool backup to local memory following a power loss event causing loss to the seed pool," as recited in independent claim 1. However, the Examiner incorrectly asserted that Utz teaches this missing claim feature. *See* Office Action mailed May 16, 2005, p. 3. Similar to the deficiency in Tsao, the generation of a pseudo-random number in Utz is carried out by a hardware device that has no separate seed pool: "a pseudo-random generator in the transmitting unit is used to generate a randomized synchronization code after power up, which is transmitted to a receiving unit." Utz, col. 3, ll. 23–26. This random number is not restoring any previous seed pool to the receiving unit after a power failure of the receiving unit, but is only used to synchronize the pseudo-random number generators in the two units. *See id.* col. 3, ll. 26–29. In citing Utz for this purpose, the Examiner has improperly equated a "pseudo-random number" with a "seed pool comprising a plurality of bits for generating the random number." Again, the Tsao and Utz references, taken alone or together, fail to teach or suggest the foregoing claim features.

Because Tsao and Utz, either alone or in hypothetical combination, do not include *all* of the claimed elements, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103 for independent claim 1. Additionally, Applicants request withdrawal of the Examiner's rejection of the claims depending from independent claim 1 in view of their respective dependencies and in view of unique matter recited in each dependent claim.

Independent Claim 11 Recites Features Omitted from Liu and Utz

As discussed above, the Examiner rejected independent claim 11 under 35 U.S.C. §103(a) as unpatentable over Liu in view of Utz. Independent claim 11 recites, *inter alia*:

> A method of restoring a seed pool for generating a random number for a security system, the method comprising the acts of: transmitting a periodically stored backup of the seed pool to the security system via a network following loss of the seed pool from the security system; and repopulating local memory of the security system with the periodically stored backup for use in generating the random number.

The Applicants respectfully assert that Liu and Utz do not teach or suggest, alone or in combination, all of the features recited above.

In the Office Action, the Examiner incorrectly asserted that Liu teaches a "periodically stored <u>backup</u> of the <u>seed pool</u>," among other features recited in independent claim 11. The Examiner's reading of Liu is incorrect. The Liu reference fails to teach or suggest a backup of a seed pool, as recited in claim 11. In sharp contrast to claim 11, Liu teaches the key server sends the "periodically generated random number" to the client for temporary use to send messages back to the original server. Liu, col. 30, ll. 45–47. "The random number can be attached to the data posted. . . ." *Id.* col. 30, ll.47–48. "[T]he random number can have a life span (valid time window for transmission through the server) of up to one minute." *Id.* col. 30, ll. 51–53. This short life span clearly indicates that Liu is missing a backup, much less a periodic backup of a

seed pool. In fact, periodic-<u>generation</u> is clearly different from periodic-<u>backup</u>. The Utz reference does not obviate these deficiencies of Liu.

The Examiner admits that "Liu does not explicitly teach local memory of the security system with the periodically stored backup for use in generating the random number following loss of the seed pool from the security system [sic]." Office Action mailed May 16, 2005, p. 4. However, the Examiner incorrectly asserted that "Utz discloses repopulating local memory of the security system with the periodically stored backup for use in generating the random number following loss of the seed pool from the security system (Utz abstract 10–13; pseudo random number generator generates a another [sic] pseudo-random number if power to transmitting unit is interrupted)." *Id.* As discussed above for independent claim 1, Utz does not teach <u>restoring</u> a seed pool (or even use of a seed pool) for the generation of random numbers, but rather Utz teaches <u>generating new</u> random numbers using a pseudo-random number generator. Similarly, Utz fails to teach or suggest "<u>repopulating</u> local memory . . . with the periodically stored <u>backup</u>," as recited in claim 11. Again the generator of Utz creates an entirely new number which is not based on a stored <u>backup</u>.

Because Liu and Utz, either alone or in hypothetical combination, do not include *all* of the claimed elements, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103 for independent claim 11. Additionally, Applicants request withdrawal of the Examiner's rejection of the claims depending from independent claim 11 in view of their respective dependencies and in view of unique matter recited in each dependent claim.

Independent Claim 17 Recites Features Omitted from Tsao, Liu, and Utz

Independent claim 17 recites, *inter alia*:

a seed pool stored on the power dependent memory device, wherein the seed pool comprises a plurality of random bits; . . . a backup control

module configured for periodically storing a backup of the seed pool in the remote storage device; and a restoration control module configured for repopulating the power dependent memory device with the backup following replacement of the limited life battery.

The Applicants respectfully assert that Tsao, Liu and Utz do not teach or suggest, alone or in hypothetical combination, all of the features recited above.

Tsao does not teach "a seed pool stored on the power dependent memory device, wherein the seed pool comprises a plurality of random bits," as recited in claim 17. As noted above in the discussion of claim 1, Tsao states "No seed pool for the generation of a random number is ever isolated from this hardware function", i.e., Tsao's random number generator. Tsao does not need or use an independent seed pool for the generation of random numbers, and neither Liu nor Utz obviates this deficiency. As discussed above with reference to independent claim 11, Liu does not teach a periodic backup or restoration of a seed pool for the generation of a random numbers, and neither Tsao nor Utz obviates this deficiency. Finally, as discussed above for independent claim 1, Utz does not teach restoring a seed pool for the generation of random numbers, but rather Utz teaches using a hardware random number generator to generate entirely new pseudo-random numbers without any reference to seed pools, much less a restored seed pool. Thus, seed pools, backups, and restored backups are clearly missing from the cited references, taken alone or in combination.

Because the Tsao, Liu, and Utz references, either alone or in hypothetical combination, do not include *all* of the claimed elements, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103 for independent claim 17. Additionally, Applicants request withdrawal of the Examiner's rejection of the claims depending from independent claim 17 in view of their respective dependencies and in view of unique matter recited in each dependent claim.

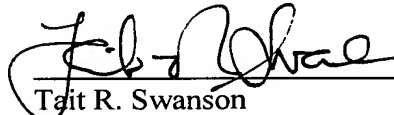*The Gallup Reference Cannot Obviate the Deficiencies of Tsao, Utz and Liu*

As discussed above, under 35 U.S.C. §103(a) the Examiner rejected claims 2-3 as unpatentable over Tsao in view of Utz and Liu; rejected claims 4-6 as unpatentable over Tsao in view of Utz, Liu, and Gallup; rejected claims 12-13 as unpatentable over Liu in view of Utz and Gallup; and rejected claim 19 as unpatentable over Tsao in view of Liu and Gallup. The Applicants respectfully assert that the Gallup reference does not obviate the deficiencies of Tsao, Utz or Liu discussed in detail above. For these reasons, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103, and allowance of claims 1–20.

Conclusion

The Applicants respectfully submit that all pending claims should be in condition for allowance. However, if the Examiner believes certain amendments are necessary to clarify the present claims or if the Examiner wishes to resolve any other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Date: June 28, 2005

Tait R. Swanson
Registration No. 48,226
(281) 970-4545

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400